RP2350 CPU

File: PICO6510-RP2350B_v23.kicad_sch

ESP32

File: PICO6510-ESP32_v23.kicad_sch

6510 Interface

File: PICO6510-6510_Interface_v23.kicad_sch

USB Hub

File: PICO6510-USBHUB_v23.kicad_sch

Power Supply

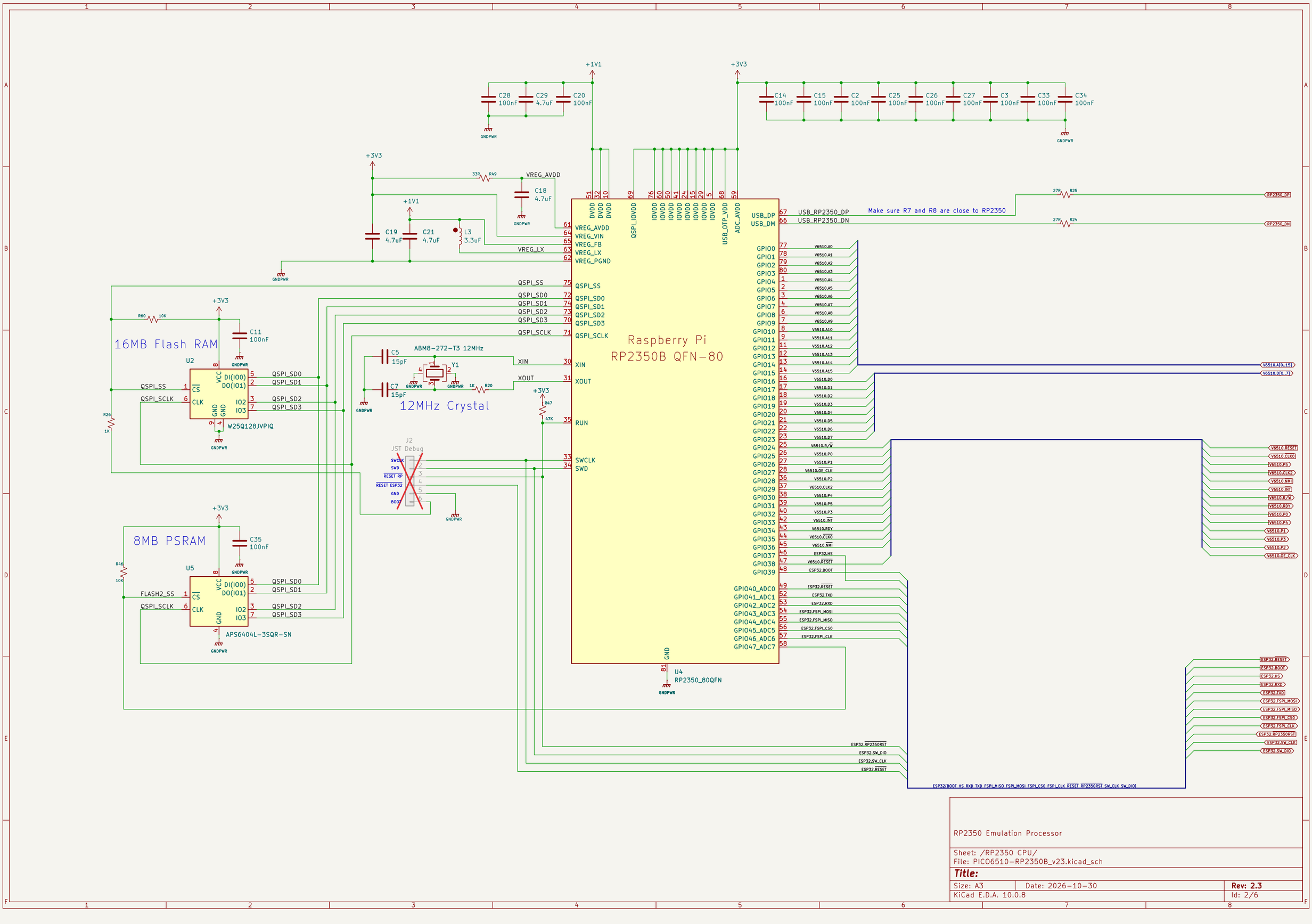
File: PICO6510-PowerSupply_v23.kicad_sch

A 6510 replacement using a Raspberry Pi RP2350 MCU.

Sheet: /
File: PICO6510_v23.kicad_sch

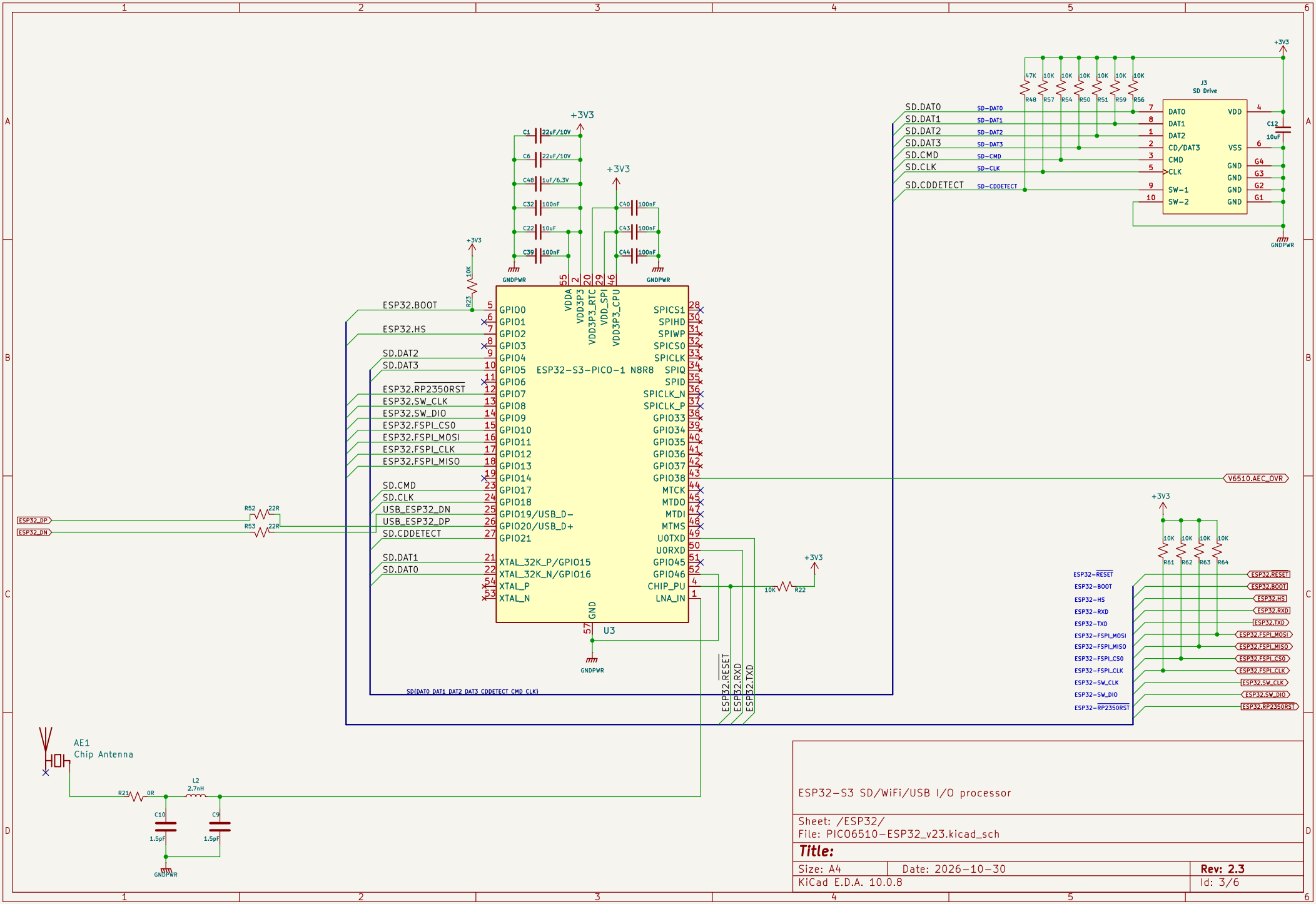
Title: PICO6510

Size: A4	Date: 2023-08-28	**Rev: 2.3**
KiCad E.D.A. 10.0.8		Id: 1/6



RP2350 Emulation Processor

Sheet: /RP2350 CPU/		
File: PICO6510-RP2350B_v23.kicad_sch		
Title:		
Size: A3	Date: 2026-10-30	**Rev: 2.3**
KiCad E.D.A. 10.0.8		Id: 2/6


ESP32-S3-PICO-1 N8R8
U3
J3
SD Drive
AE1
Chip Antenna
ESP32-S3 SD/WiFi/USB I/O processor
Sheet: /ESP32/
File: PICO6510-ESP32_v23.kicad_sch
Title:
Size: A4
Date: 2026-10-30
Rev: 2.3
KiCad E.D.A. 10.0.8
Id: 3/6

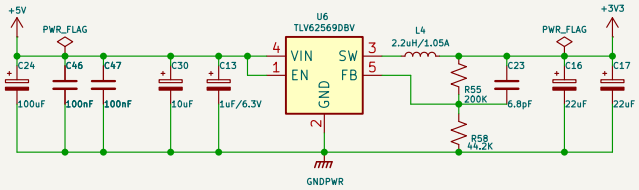
*** 6510 ONLY – DO NOT FIT TO A 6502 / 6512 SOCKET ***
6510 moves Vcc to pin 6 and Phi0 to pin 1: fitting this board to a
6510 shorts +5V to A1, GND to the host clock, and 5V into an MCU pin.

6510/8500: PHI0 in (pin 1), PHI2 out via 74AHCT125. AEC low tri-states A0–A15,
D0–D7 and R/W in hardware; PHI2 out is independent of AEC. P0–P5 via TXS0108ERGYR
(U15) to GPIO25/26/28/29/30/31.
Buffered interface: 74AHCT244 address, 74AHCT245 data, 74AHCT125 PHI2/R–W.

Sheet: /6510 Interface/
File: PICO6510-6510_Interface_v23.kicad_sch

Title: PICO6510 – 6510 Interface

Size: A3	Date:	Rev: 2.3
KiCad E.D.A. 10.0.8		Id: 4/6

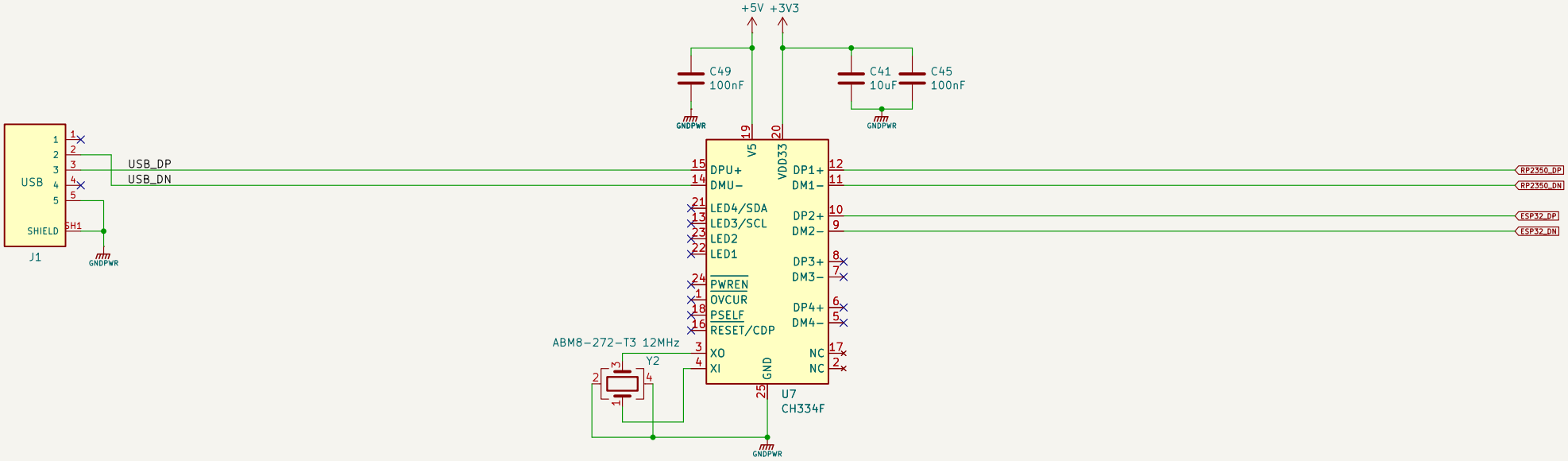


3V3 Buck converter

Sheet: /Power Supply/
File: PICO6510-PowerSupply_v23.kicad_sch

Title:

Size: A4	Date:	**Rev: 2.3**
KiCad E.D.A. 10.0.8		Id: 5/6



Hub to present RP2350 and ESP32 USB to host.

Sheet: /USB Hub/
File: PICO6510−USBHUB_v23.kicad_sch

Title: USB Hub Controller

Size: A4	Date: 2026−04−01	**Rev: 2.3**
KiCad E.D.A. 10.0.8		Id: 6/6